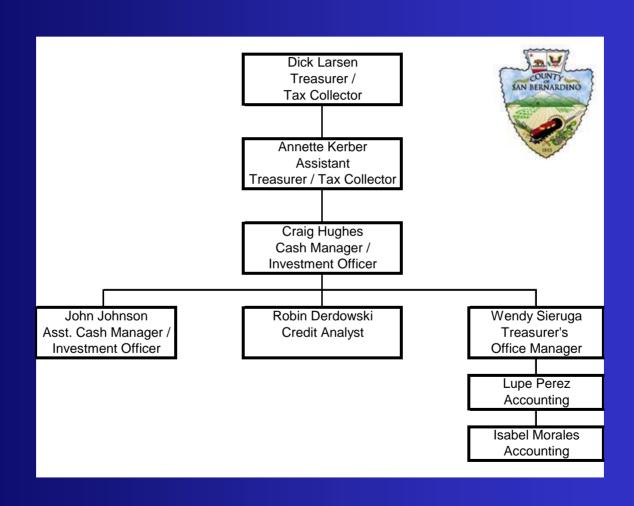
# **Cash Flow Forecasting**

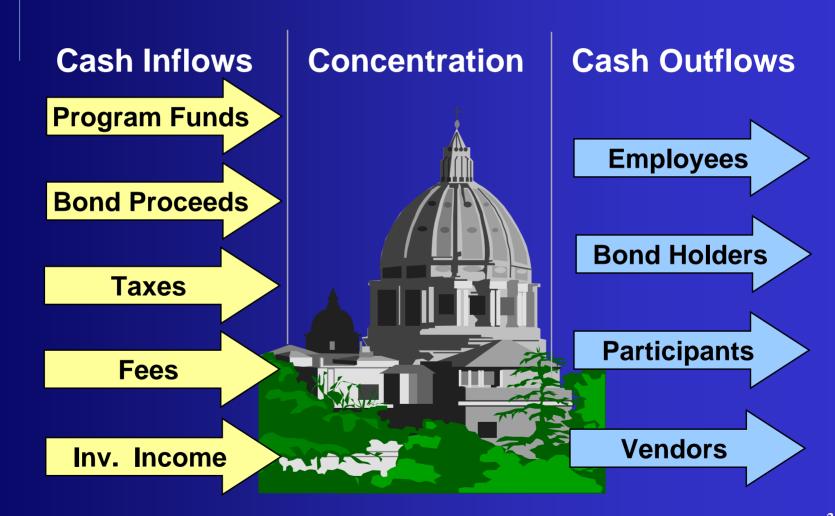


Annette Kerber, Assistant Treasurer / Tax Collector Craig Hughes, Investment Officer

# **Treasury Staff**



# **Identifying the Cash**



# The Traditional "Micro" Approach

- Identify cash flow components
- Identify data sources
- Determine degree of certainty/predictability
- Develop cash flow forecast
  - Timing of cash inflows / revenues
  - Timing of cash outflows / expenditures
- Compare forecast to actual results

This approach can be difficult to implement because complete information about cash flow components is often not available.

# **Macro-Level Approach: The Theory**

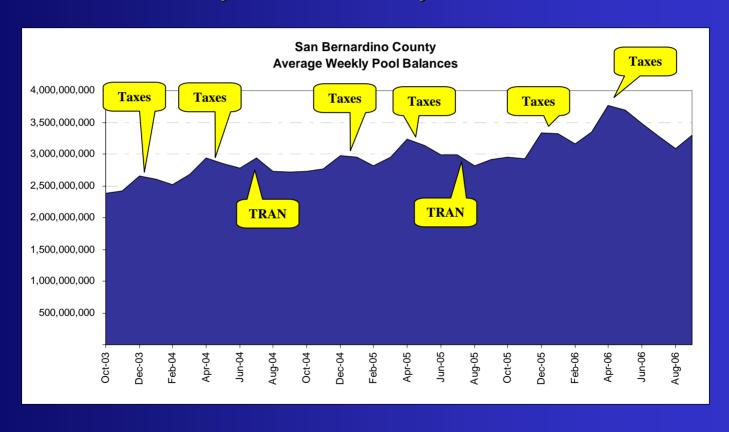
- Macro-level cash flow forecasting prepared by an outside investment advisor with input from the County
  - Versus micro-level cash flow forecasting which is prepared daily by Treasurer staff
- Identify an optimal allocation of investments
  - Money that needs to remain short-term for upcoming disbursements ("liquidity" and "short-term" balances)
  - Balance that could be invested longer-term ("core" balance)
- Management of short-term investments based on micro-level cash flow analysis
- Management of longer-term investments based on market conditions

# Macro-Level Approach: The Process

- Review historical cash balances (typically monthly data for 2-5 years)
- Determine if there are any "statistically significant" seasonal changes in monthly balances
  - Tax receipts / apportionments
  - One-time cash flows such as bond or TRAN proceeds
- Identify any growth trends
- Project future balances

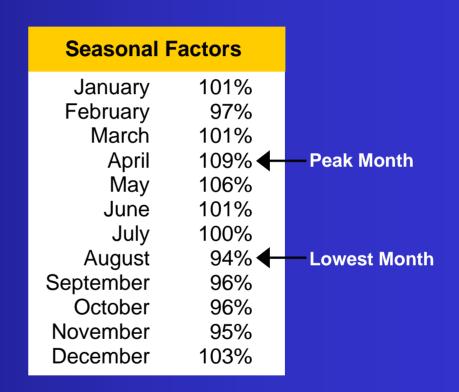
# **Step 1: Review Historic Balances**

### **Analysis of historic monthly cash flows**



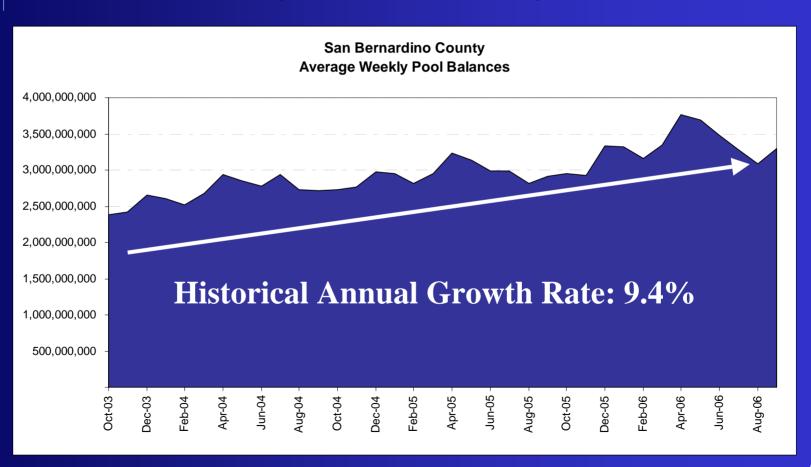
# Step 2: Compute "Seasonal Factors"

- Quantify average size of monthly balance compared to overall historical average
- Identify historical peaks and low points in balances



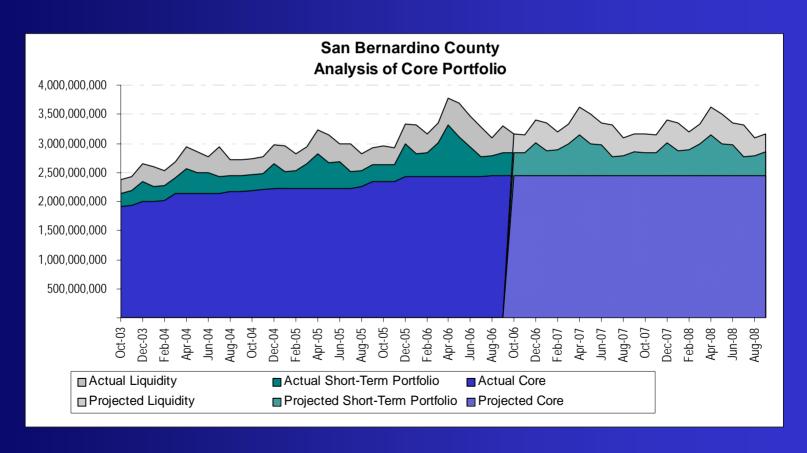
# **Step 3: Compute Growth rate**

## **Analysis of historic monthly cash flows**



# Step 4: Project Balances / Identify "Core"

Short-term and liquid funds meet seasonal cash flow needs while "core" funds can be invested longer term.



# **Portfolio Components**

- Liquidity or Short-Term portfolio
  - Provides overnight liquidity or meets short-term cash needs
  - Short-term investments Examples
    - Overnight Repurchase Agreements
    - Negotiable Certificates of Deposit
    - Federal Agency Discount Notes
    - Commercial Paper
    - Money Market Funds
- Core portfolio or reserve
  - Funds not expected to be redeemed in under 12 months
  - Can be invested in longer-term securities

## **Short-term Cash Flow Management Process**

## **Managing cash flows:**

- Inflows / revenues
- Maturing investments
- Outflows / expenditures
- Investment trades and settlements

## **Projecting Cash Flows:**

- Daily opening balance to invest
- Daily, weekly, monthly liquidity

# **Treasurers Daily Cash Worksheet**

Purpose of the Daily Worksheet is to provide all necessary daily liquidity balance information to the staff.

- Provides investment officers with the opening available balance to invest.
- When trades are placed, trade information and settlement amounts are added to the worksheet.
- Any late money deposits or cash adjustments are added to the worksheet.
- Allows staff to quickly reference and calculate balances at the end of the trading session.
- Provides a single data source for Cash Flow Projection
   Worksheet information.

### Before Trading TREASURER'S DAILY CASH WORKSHEET FOR: 10/5/2006

B of A Balance (Opening): Add BONY: Add Add Add Add State: Add Mutual Redemption Minus W ires: Minus Compensating Balance: Minus W arrant Projections* Minus: Available to invest:	24,591,342.97 265,354,465.28 2,361,466.16 10,000,000.00 15,000,000.00	Notes: CASHBOOK BALANCE: FED FUNDS RATE: FEDERATED PRIME YIELD: FEDERATED GOVT YIELD: GOLDMAN PRIME: 2 YR TSY O/N Repurchase Agmts: Lehman Agency B of A Agency	3,461.416 5.25% 5.18% 5.16% 5.20% 4.61%	Pool Balance is transferred to the Cash Flow	
Add Late Money Closing Available Balance Month To Date Balance Year To Date Balance	\$ 11,874,923.23	_	ng Cash nce is	Projection Worksheet	
Bal Add: Investments Maturing: Mat- Repo Morgan Stanley Mat- C/P Rabobank Mat- C/P Rabobank Mat- C/P BNP Mat- NCD Citibank	BONY  100,014,777.78 50,000,000.00 50,000,000.00 40,000,000.00 25,339,687.50	Cash Proje	red to the Flow ection ksheet	Consolidated	
Less: W ires (Total): <b>MED.PREMIUMS</b>	265,354,465.28	2,361,466.16	-		
Investments Purchased: Name MSO/N Repo @ 5.32	<u>Settlem e</u>	nt Amount	CUSIP N/A		
				1	

### **After Trading**

# TREASURER'S DAILY CASH WORKSHEET FOR: 10/5/2006



B of A Balance (Opening): Add BONY: Add Add Add Add State: Add Mutual Redemption Minus Wires: Minus Compensating Balance: Minus W arrant Projections* Minus: Available to invest:	24,591,342.97 265,354,465.28 2,361,466.16 10,000,000.00 15,000,000.00 274,878,513.75 (419,248.43)	Notes: CASHBOOK BALANCE: FED FUNDS RATE: FEDERATED PRIME YIELD: FEDERATED GOVT YIELD: GOLDMAN PRIME: 2 YR TSY O/N Repurchase Agmts: Lehman Agency B of A Agency	5.25%	,461.416 5.25% 5.18% 5.16% 5.20% 4.61%	
Add Late Money	\$ 11,874,923.23				
Closing Available Balance Month To Date Balance Year To Date Balance					
Bal Add: Investments Maturing: Mat- Repo Morgan Stanley Mat- C/P Rabobank Mat- C/P Rabobank Mat- C/P BNP Mat- NCD Citibank	BONY  100,014,777.78 50,000,000.00 50,000,000.00 40,000,000.00 25,339,687.50	tran the (	B of A Savii de Data is sferred to Cash Flow ojection	ngs	Consolidated
Less: Wires (Total): <b>MED.PREMIUMS</b>	265,354,465.28	36 We	orksheet	-	
Investments Purchased: Name	<u>Settlem e</u>	nt Amour		CUSIP	
MS O/N Repo @ 5.32	100,000,000.00		N/A		
LB O/N Repo @ 5.25	138,000,000.00		N/A		
UBS O/N CP @ 5.24	11,998,253.33		90262DK61		
BSC 11/07/06 CP @ 5.25	24,880,260.42		06737JL78		5

# **Cash Flow Projection Worksheet**

#### **Functions**

- To project daily, weekly, and monthly liquidity
- To provide a day to day snapshot of cash flow information projected three months out.
- To monitor our accuracy and performance in projecting balances.
- To provide a "what if" modeling vehicle for determining investment amounts and timing.

## Inflows are added to the Cash Flow Worksheet

- Major inflows are added to the worksheet
  - Maturing Investments (longer than overnight)
  - Property tax collection receipts
  - State payments for schools
  - State payments for welfare
  - TRAN/Bond Issues

# Cash Flow Projection Worksheet Major Inflows

County of San Bernardino Treasurer's Office

Projected Investment Balance, by Day

OCTOBER 2006

Date	Liquidity Balance	Inves	tments Maturing	Late Money	Otho	· Maiar Bassints	Total
Date	fr Prior Day*	Amount	Description	Late woney	Othe	r Major Receipts	Revenues
10/1/2006	397,000,000						-
10/2/2006	397,000,000	25,000,000	Bear Stearns CP		2,000,000	Highway Users	27,000,000
10/3/2006	339,000,000	25,000,000	Bear Stearns CP		27,574,052	Lottery, school construction	52,574,052
10/4/2006	353,000,000	10,000,000	FFCB		2,000,000	Welfare	12,000,000
10/5/2006	315,000,000	25,000,000	Citi NCD		2,000,000	Welfare	27,000,000
10/6/2006	300,000,000	20,000,000	Soc Gen CP		3,622,411	Schools	23,622,411
10/7/2006	277,000,000		105,000,000				-
10/8/2006	277,000,000						-
10/9/2006	277,000,000						-
10/10/2006	277,000,000	25,000,000	Bear Stearns CP,		11,867,718	school construction	36,867,718
10/11/2006	260,000,000	25,000,000	CCP		24,645,652	Schools	49,645,652
10/12/2006	231,000,000	25,000,000	BNP YCD		22,374,870	Schools	47,374,870
10/13/2006	249,000,000	25,000,000	Soc Gen CP		12,000,000	W elfare	37,000,000
10/14/2006	239,000,000		100,000,000				-
10/15/2006	239,000,000						-
10/16/2006	239,000,000	20,000,000	FNMA		8,054,688	W elfare	28,054,688
10/17/2006	233,000,000	25,000,000	Rabo NCD		12,352,559	Schools	37,352,559
10/18/2006	249,000,000	25,000,000	Soc Gen NCD		5,000,000	Local Sales Tax	30,000,000
10/19/2006	220,000,000	25,000,000	UBS NCD				25,000,000
10/20/2006	243,000,000	10,000,000	Citi NCD				10,000,000
10/21/2006	233,000,000		105,000,000				-
10/22/2006	233,000,000						-
10/23/2006	233,000,000	25,000,000	GECC CP				25,000,000
10/24/2006	251,000,000	25,000,000	Bear Stearns CP				25,000,000
10/25/2006	269,000,000	25,000,000	GECC CP				25,000,000
10/26/2006	225,000,000	20,000,000	WFBCD				20,000,000
10/27/2006	223,570,633	25,000,000	CCP		220,000,000	Realignment, Sales Tax, S	245,000,000
10/28/2006	444,141,266		120,000,000				-
10/29/2006	444,711,899						-
10/30/2006	445,282,532	25,000,000	Citigroup CP				25,000,000
10/31/2006	467,853,165	, , , , , , , , , , , , , , , , , , , ,	· ·		22,000,000	Welfare, Highway Users	22,000,000
	. , ,	455,000,000	•	=	375,491,950	, <u> </u>	830,491,950
		,, - 0 0			3.2,.2.,300	<u>L</u>	1 2 2 , 1 2 1 , 2 3 3

# Outflows and security purchases are added to the Cash Flow Projection Worksheet

- Major outflows are added to the worksheet
  - Investments purchased longer than overnight
  - Property tax apportionment payments
  - School and County payrolls and payroll taxes
  - School and County retirement contributions
  - Bond Payments

# Cash Flow Projection Worksheet Projected Outflows & Trades

County of San Bernardino Treasurer's Office
Projected Investment Balance, by Day
OCTOBER 2006

10/1/2006		Major Disbu L/T inves	D is b u r s e m e n t s	Other Major	nvestments Purchased	Date	
10/2/2006	rest	L/I inves			Description	Amount	
10/3/2006	-						10/1/2006
10/4/2006	000,000	118,000	Med prems, schoo	118,000,000			10/2/2006
10/4/2006	000,000	30,000		5,000,000	Bear Stearns CP	25,000,000	10/3/2006
10/6/2006	650,000	54,650		5,000,000		49,650,000	10/4/2006
10/7/2006	000,000	55,000		5,000,000	Citigroup CP, Citigroup CP	50,000,000	10/5/2006
10/8/2006	000,000	53,000	School retirem ent,	28,000,000	Barclays CP	25,000,000	10/6/2006
10/9/2006         45,000,000 FMDN, GECC CP, FNMA         11,000,000 Def comp, school         56,0           10/11/2006         35,000,000 BNP YCD, FHLMC         27,000,000 C payroll         62,0           10/12/2006         25,000,000 Bear Stearns CP         7,000,000 C taxes         32,0           10/13/2006         40,000,000 Citigroup CP, FHLB         7,300,000 W VDC         47,3           10/14/2006         40,000,000 BAC CP         10,000,000 Med prems, school         35,0           10/15/2006         25,000,000 BAC CP         10,000,000 Med prems, school         35,0           10/17/2006         5,000,000 SANBAG         65,0           10/19/2006         60,000,000 Citibank CD, BAC CP, FNMA         5,000,000 SANBAG         65,0           10/19/2006         15,000,000 FNMA         15,000,000 BOR, SANBAG         5,0           10/21/2006         20,000,000 FNMA         15,000,000 BOR, SANBAG         20,0           10/22/2006         30,000,000 BS CP, FFCB, FFCB         32,000,000 C payroll         82,0           10/25/2006         50,000,000 FNMA         7,000,000 C taxes         22,0           10/27/2006         25,000,000 C alyon YCD         25,000,000 C alyon YCD         25,000,000 C alyon YCD	-						10/7/2006
10/10/2006       45,000,000       FMDN, GECC CP, FNMA       11,000,000       Def comp, school       56,0         10/11/2006       35,000,000       BNP YCD, FHLMC       27,000,000       C payroll       62,0         10/12/2006       25,000,000       Bear Stearns CP       7,000,000       C taxes       32,0         10/13/2006       40,000,000       Citigroup CP, FHLB       7,300,000       W VDC       47,3         10/15/2006       40,115/2006       25,000,000       BAC CP       10,000,000       Med prems, school       35,0         10/17/2006       5,000,000       5,000,000       5,000,000       5,000,000       50,0         10/19/2006       60,000,000       Citibank CD, BAC CP, FNM/       5,000,000       SANBAG       65,0         10/20/2006       15,000,000       FNMA       15,000,000       PERS, SANBAG       30,0         10/21/2006       20,000,000       BOR, SANBAG       20,0         10/22/2006       20,000,000       BOR, SANBAG       20,0         10/24/2006       50,000,000       BS CP, FFCB, FFCB       32,000,000       C payroll       82,0         10/25/2006       15,000,000       FNMA       7,000,000       C taxes       25,0         10/28/2006       25,000,000 <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>10/8/2006</td>	-						10/8/2006
10/11/2006	-						10/9/2006
10/12/2006         25,000,000         Bear Stearns CP         7,000,000         C taxes         32,0           10/13/2006         40,000,000         Citigroup CP, FHLB         7,300,000         W VDC         47,3           10/14/2006         10/15/2006         10/16/2006         10,000,000         Med prems, schoo         35,0           10/16/2006         25,000,000         BAC CP         10,000,000         Med prems, schoo         35,0           10/18/2006         60,000,000         Citibank CD, BAC CP, FNMA         5,000,000         SANBAG         65,0           10/19/2006         15,000,000         FNMA         15,000,000         PERS, SANBAG         30,0           10/21/2006         20,000,000         BOR, SANBAG         20,0 <td< td=""><td>000,000</td><td>56,000</td><td>Def comp, school</td><td>11,000,000</td><td>FMDN, GECC CP, FNMA</td><td>45,000,000</td><td>10/10/2006</td></td<>	000,000	56,000	Def comp, school	11,000,000	FMDN, GECC CP, FNMA	45,000,000	10/10/2006
10/13/2006       40,000,000 Citigroup CP, FHLB       7,300,000 W VDC       47,3         10/14/2006       10/15/2006       10,000,000 Med prems, schoo       35,0         10/16/2006       25,000,000 BAC CP       10,000,000 Med prems, schoo       35,0         10/17/2006       5,000,000 SANBAG       65,0         10/19/2006       60,000,000 FNMA       5,000,000 SANBAG       5,0         10/20/2006       15,000,000 FNMA       15,000,000 PERS, SANBAG       30,0         10/21/2006       20,000,000 BOR, SANBAG       20,0         10/22/2006       30,00       8,000,000 Def comp       8,0         10/24/2006       50,000,000 BS CP, FFCB, FFCB       32,000,000 C payroll       82,0         10/25/2006       15,000,000 FNMA       7,000,000 C taxes       22,0         10/27/2006       25,000,000 Calyon YCD       25,0	000,000	62,000	C payroll	27,000,000	BNP YCD, FHLMC	35,000,000	10/11/2006
10/14/2006       10/15/2006         10/15/2006       25,000,000 BAC CP       10,000,000 Med prems, schoo       35,0         10/17/2006       5,000,000 SANBAG       55,0         10/18/2006       60,000,000 Citibank CD, BAC CP, FNMA       5,000,000 SANBAG       65,0         10/19/2006       5,000,000 SANBAG       5,0         10/20/2006       15,000,000 FNMA       15,000,000 PERS, SANBAG       30,0         10/21/2006       20,000,000 BOR, SANBAG       20,0         10/22/2006       8,000,000 Def comp       8,0         10/24/2006       50,000,000 BS CP, FFCB, FFCB       32,000,000 C payroll       82,0         10/25/2006       15,000,000 FNMA       7,000,000 C taxes       22,0         10/27/2006       25,000,000 Calyon YCD       25,0	000,000	32,00	C taxes	7,000,000	Bear Stearns CP	25,000,000	10/12/2006
10/15/2006       25,000,000 BAC CP       10,000,000 Med prems, schoo       35,0         10/17/2006       5,000,000 SANBAG       5,00         10/18/2006       60,000,000 Citibank CD, BAC CP, FNM A S,000,000 SANBAG       65,0         10/19/2006       5,000,000 SANBAG       5,0         10/20/2006       15,000,000 FNMA       15,000,000 PERS, SANBAG       30,0         10/21/2006       20,000,000 BOR, SANBAG       20,0         10/23/2006       8,000,000 Def comp       8,0         10/25/2006       50,000,000 BS CP, FFCB, FFCB       32,000,000 C payroll       82,0         10/25/2006       15,000,000 FNMA       7,000,000 C taxes       22,0         10/26/2006       25,000,000 C alyon YCD       25,0       25,0	300,000	47,30	WVDC	7,300,000	Citigroup CP, FHLB	40,000,000	10/13/2006
10/16/2006       25,000,000       BAC CP       10,000,000       Med prems, schoo       35,000,000         10/17/2006       5,000,000       5,000,000       5,000,000       5,000,000       SANBAG       65,000,000       60,000,000       FNMA       5,000,000       SANBAG       5,000,000       SANBAG       5,000,000       SANBAG       30,000,000       10/20/20/20/20/20/20/20/20/20/20/20/20/20	-				•		10/14/2006
10/17/2006       5,000,000       5,0         10/18/2006       60,000,000 Citibank CD, BAC CP, FNMA       5,000,000 SANBAG       65,0         10/19/2006       5,000,000 SANBAG       5,0         10/20/2006       15,000,000 FNMA       15,000,000 PERS, SANBAG       30,0         10/21/2006       20,000,000 BOR, SANBAG       20,0         10/23/2006       8,000,000 Def comp       8,0         10/25/2006       50,000,000 BS CP, FFCB, FFCB       32,000,000 C payroll       82,0         10/26/2006       15,000,000 FNMA       7,000,000 C taxes       22,0         10/27/2006       25,000,000 C alyon YCD       25,000,000 C taxes       25,0	-						10/15/2006
10/18/2006       60,000,000       Citibank CD, BAC CP, FNMA       5,000,000       SANBAG       65,0         10/19/2006       5,000,000       SANBAG       5,0         10/20/2006       15,000,000       FNMA       15,000,000       PERS, SANBAG       30,0         10/21/2006       20,000,000       BOR, SANBAG       20,0         10/23/2006       8,000,000       Def comp       8,0         10/25/2006       50,000,000       FNMA       7,000,000       C payroll       82,0         10/26/2006       15,000,000       FNMA       7,000,000       C taxes       22,0         10/27/2006       25,000,000       Calyon YCD       25,00       25,00       25,00	000,000	35,000	Med prems, schoo	10,000,000	BAC CP	25,000,000	10/16/2006
10/19/2006       5,000,000       SANBAG       5,0         10/20/2006       15,000,000       FNMA       15,000,000       PERS, SANBAG       30,0         10/21/2006       20,000,000       BOR, SANBAG       20,0         10/23/2006       8,000,000       BOR, SANBAG       20,0         10/24/2006       8,000,000       Def comp       8,0         10/25/2006       50,000,000       FNMA       7,000,000       C payroll       82,0         10/26/2006       15,000,000       FNMA       7,000,000       C taxes       22,0         10/27/2006       25,000,000       Calyon YCD       25,0	000,000	5,000		5,000,000			10/17/2006
10/20/2006       15,000,000 FNMA       15,000,000 PERS, SANBAG       30,000,000 PERS, SANBAG         10/21/2006       20,000,000 BOR, SANBAG       20,000,000 Def comp       8,000,000 Def comp       8,000,000 C payroll         10/25/2006       50,000,000 FNMA       7,000,000 C taxes       22,000,000,000 C taxes       22,000,000,000 C taxes	000,000	65,000	SANBAG	5,000,000	Citibank CD, BAC CP, FNMA	60,000,000	10/18/2006
10/21/2006       20,000,000       BOR, SANBAG       20,00       10,0	000,000	5,000	SANBAG	5,000,000			10/19/2006
10/22/2006       20,000,000 BOR, SANBAG       20,00         10/23/2006       8,000,000 Def comp       8,00         10/25/2006       50,000,000 BS CP, FFCB, FFCB       32,000,000 C payroll       82,00         10/26/2006       15,000,000 FNMA       7,000,000 C taxes       22,0         10/27/2006       25,000,000 Calyon YCD       25,00	000,000	30,000	PERS, SANBAG	15,000,000	FNMA	15,000,000	10/20/2006
10/23/2006         20,000,000 BOR, SANBAG         20,00           10/24/2006         8,000,000 Def comp         8,00           10/25/2006         50,000,000 BS CP, FFCB, FFCB         32,000,000 C payroll         82,0           10/26/2006         15,000,000 FNMA         7,000,000 C taxes         22,0           10/27/2006         25,000,000 C alyon YCD         25,0	-						10/21/2006
10/24/2006       8,000,000       Def comp       8,00         10/25/2006       50,000,000       BS CP, FFCB, FFCB       32,000,000       C payroll       82,0         10/26/2006       15,000,000       FNMA       7,000,000       C taxes       22,0         10/27/2006       25,000,000       Calyon YCD       25,0	-						10/22/2006
10/25/2006       50,000,000 BS CP, FFCB, FFCB       32,000,000 C payroll       82,0         10/26/2006       15,000,000 FNMA       7,000,000 C taxes       22,0         10/27/2006       25,000,000 C alyon YCD       25,0	000,000	20,000	BOR, SANBAG	20,000,000			10/23/2006
10/26/2006     15,000,000 FNMA     7,000,000 C taxes     22,0       10/27/2006     25,000,000 C alyon YCD     25,0	000,000	8,000	Defcomp	000,000,8			10/24/2006
10/26/2006       15,000,000 FNMA       7,000,000 C taxes       22,0         10/27/2006       25,000,000 C alyon YCD       25,0	000,000	82,000	C payroll	32,000,000	BS CP, FFCB, FFCB	50,000,000	10/25/2006
10/27/2006 25,000,000 Calyon YCD 25,0 10/28/2006 25,000,000 Calyon YCD	000,000	22,000		7,000,000	FNMA		10/26/2006
10/28/2006	000,000	25,000			Calyon YCD		10/27/2006
4.0.10.0.10.0.0	-						10/28/2006
10/29/2006	-						10/29/2006
10/30/2006 3,000,000 Med prems 3,0	000,000	3,000	Med prems	3,000,000			10/30/2006
	000,000		S payroll,				10/31/2006

# **Debt Service Schedule**

Debt Type	G.F.	G.F.	РОВ	РОВ	Medical	Medical	Medical	Medical	Solid Waste	
									Inland Empire	
									PFC***	
	Justice	2001/2002 West		1995 Pension	County Medical				Refunding	
	Center/Airport	Valley Detention	1995 Pension	Obligation	Center COPs,				COPs, Series 2003B	
	Improvement Refunding	Center Refinancing	Obligation Revenue Bonds	Revenue Bonds (Taxable)	Series 1998 Variable Rate	County Medical	County Medical	County Medical	(Taxable)	
	COPs,	COPs,	(Taxable)	(Taxable) Capital	Swapped to Fixed	Center COPs,	Center COPs,	Center COPs.	Auction Rate	
DATE	Series 2002 A	2001Series B	Current Interest	Appreciation	@ 4.1895%	Series 1997	Series 1995	Series 1994	Securities	TOTAL
6/30/2006	6,602,137.50	6,143,900.00	31,576,434.50	-	7,394,886.46	16,809,767.50	13,243,243.75	14,716,275.00	9,019,813.55	105,506,458.26
6/30/2007	6,602,987.50	6,138,175.00	33,253,204.50	-	7,394,886.46	16,812,630.00	13,434,762.50	14,525,418.75	9,067,776.01	107,229,840.72
6/30/2008	6,469,937.50	5,659,150.00	35,014,199.00	-	7,394,886.46	16,809,860.00	15,071,243.75	12,889,200.00	9,101,935.55	108,410,412.26
6/30/2009	6,540,800.00	5,642,875.00	36,857,509.25	-	8,373,938.96	16,812,045.00	15,070,725.00	12,888,100.00	9,121,955.89	111,307,949.10
6/30/2010	6,494,800.00	5,632,750.00	38,798,739.00	-	8,429,949.21	-	15,074,475.00	12,885,300.00	9,152,066.81	96,468,080.02
6/30/2011	6,538,200.00	5,627,900.00	40,837,398.75	-	8,481,769.96	-	15,186,425.00	12,767,862.50	9,190,874.58	98,630,430.79
6/30/2012	6,467,200.00	5,610,800.00	42,976,352.25	-	16,263,915.96	-	7,432,587.50	12,771,150.00	9,238,258.52	100,760,264.23
6/30/2013	6,581,000.00	5,604,900.00	-	45,220,000.00	16,270,102.96	-	7,434,512.50	12,772,887.50	9,267,371.12	103,150,774.08
6/30/2014	6,472,000.00	-	-	47,580,000.00	16,259,531.96	-	7,441,487.50	12,767,662.50	9,327,030.96	99,847,712.92
6/30/2015	6,557,750.00	-	-	50,055,000.00	16,330,108.21	-	7,442,537.50	12,769,787.50	9,366,604.84	102,521,788.05
6/30/2016	6,515,250.00	-	-	52,655,000.00	16,281,831.71	-	7,446,687.50	12,773,300.00	9,411,331.02	105,083,400.23
6/30/2017	-	-	-	55,385,000.00	11,419,439.96	-	12,344,362.50	12,772,512.50	9,459,525.32	101,380,840.28
6/30/2018	-	-	-	58,250,000.00	11,445,027.71	-	12,351,425.00	12,771,737.50	-	94,818,190.21
6/30/2019	-	-	-	61,260,000.00	13,122,436.21	-	8,861,875.00	14,637,350.00	-	97,881,661.21
6/30/2020	-	-	-	64,420,000.00	13,149,570.71	-	8,867,350.00	14,640,362.50	-	101,077,283.21
6/30/2021	-	-	-	67,735,000.00	11,201,842.21	-	7,109,500.00	18,292,225.00	-	104,338,567.21
6/30/2022	-	-	-	67,910,000.00	11,475,061.21	-	7,294,750.00	17,915,112.50	-	104,594,923.71
6/30/2023	-	-	-	-	11,429,427.46	-	7,284,975.00	17,913,962.50	-	36,628,364.96
6/30/2024	-	-	-	-	18,714,118.96	-	-	17,966,150.00	-	36,680,268.96
6/30/2025	-	-	-	-	18,720,756.71	-	-	17,969,200.00	-	36,689,956.71
6/30/2026	-	-	-	-	21,243,604.46	-	-	15,403,225.00	-	36,646,829.46
6/30/2027	-	-	-	-	15,120,232.48	-	-	15,398,600.00	-	30,518,832.48
6/30/2028	-	-	-	-	-	-	-	14,680,693.75	-	14,680,693.75
6/30/2029	-	-	-	-	-	-	-	14,675,456.25	-	14,675,456.25
Total	71,842,062.50	46,060,450.00	259,313,837.25	570,470,000.00	285,917,326.39	67,244,302.50	188,392,925.00	349,563,531.25	110,724,544.17	1,949,528,979.06

# **Daily Cash and Pool Projections**

#### **Calculations:**

After all the trade, inflow, and outflow information is added, the worksheet calculates:

- Next day's projected opening balance to invest (liquidity)
- Next day's projected pool balance
- Weekly and end of month liquidity
- Variance between actual and projected balances

# Cash Flow Projection Worksheet Daily Liquidity Projection

County of San Bernardino Treasurer's Office Projected Investment Balance, by Day OCTOBER 2006

10/25/06

Date	S m o o thing A d just m e n t	Projected Investable Cash	AVAILABLE After \$175M M	Projected Pool Balance	Actual Pool Balance	Actual Investable Cash	Percent variance
			Liquidity				
10/1/2006	570,633	433,102,000	258,102,000	3,509,950,905	3,509,741,000	397,000,000	9.09%
10/2/2006	570,633	344,288,000	169,288,000	3,394,311,633	3,404,110,000	339,000,000	1.56%
10/3/2006	570,633	369,288,000	194,288,000	3,427,254,685	3,411,792,000	353,000,000	4.61%
10/4/2006	570,633	328,582,000	153,582,000	3,409,362,633	3,461,416,000	315,000,000	4.31%
10/5/2006	570,633	302,767,000	127,767,000	3,458,986,633	3,469,344,000	300,000,000	0.92%
10/6/2006	570,633	274,952,000	99,952,000	3,445,537,044	3,462,345,000	277,000,000	-0.74%
10/7/2006	570,633	283,371,000	108,371,000	3,462,915,633	3,462,345,000	277,000,000	2.30%
10/8/2006	570,633	283,621,000	108,621,000	3,462,915,633	3,462,345,000	277,000,000	2.39%
10/9/2006	570,633	283,871,000	108,871,000	3,462,915,633	3,462,345,000	277,000,000	2.48%
10/10/2006	570,633	264,989,000	89,989,000	3,463,783,351	3,433,860,000	260,000,000	1.92%
10/11/2006	570,633	252,884,000	77,884,000	3,432,076,285	3,401,942,000	231,000,000	9.47%
10/12/2006	570,633	268,509,000	93,509,000	3,417,887,503	3,416,323,000	249,000,000	7.83%
10/13/2006	570,633	235,603,000	60,603,000	3,421,593,633	3,423,094,000	239,000,000	-1.42%
10/14/2006	570,633	235,367,000	60,367,000	3,423,664,633	3,423,094,000	239,000,000	-1.52%
10/15/2006	570,633	235,131,000	60,131,000	3,423,664,633	3,423,094,000	239,000,000	-1.62%
10/16/2006	570,633	227,950,000	52,950,000	3,421,719,321	3,418,281,000	233,000,000	-2.17%
10/17/2006	570,633	260,067,000	85,067,000	3,426,204,192	3,408,900,000	249,000,000	4.44%
10/18/2006	570,633	224,831,000	49,831,000	3,409,470,633	3,418,280,000	220,000,000	2.20%
10/19/2006	570,633	249,595,000	74,595,000	3,413,850,633	3,414,757,000	243,000,000	2.71%
10/20/2006	570,633	223,570,633	48,570,633	3,400,327,633	3,434,904,000	233,000,000	
10/21/2006	570,633	233,570,633	58,570,633	3,435,474,633	3,434,904,000	233,000,000	
10/22/2006	570,633	233,570,633	58,570,633	3,435,474,633	3,434,904,000	233,000,000	
10/23/2006	570,633	238,570,633	63,570,633	3,415,474,633	3,406,895,000	251,000,000	
10/24/2006	570,633	268,570,633	93,570,633	3,399,465,633	3,404,312,000	269,000,000	
10/25/2006	570,633	212,570,633	37,570,633	3,372,882,633	·	225,000,000	
10/26/2006	570,633	223,570,633	48,570,633	3,366,453,266		·	
10/27/2006	570,633	444,141,266	269,141,266	3,587,023,899			
10/28/2006	570,633	444,711,899	269,711,899	3,587,594,532			
10/29/2006	570,633	445,282,532	270,282,532	3,588,165,165			
10/30/2006	570,633	467,853,165	292,853,165	3,585,735,798			
10/31/2006	570,633	468,423,798	293,423,798	3,586,306,431			

17,689,623

Next
Days
Opening
Cash
Balance

# **Projecting Next Days Liquidity**

County of San Bernardino Teasurer's Office Projected Investment Balance, by Day OCTOBER 2006

10/25/06

Date	Smoothing	Projected	AVAILABLE	-	Actual Pool Balanc	Actual Investab	le Percent
Date	Adjustment	Investable Cash	After \$175MM	Balance		Cash	variance
			Liquidity				
10/1/2006	570,633	433,102,000	258,102,000	3,509,950,905	3,509,741,00	0 397,000,	2.00%
10/2/2006	570,633	344,288,000	169,288,000	3,394,311,633	3,404,110,00	0 339,000,	000 1.56%
10/3/2006	570,633	369,288,000	194,288,000	3,427,254,685	3,411,792,00	0 353,000,0	000 4.61%
10/4/2006	570,633	328,582,000	153,582,000	3,409,362,633	3,461,416,00	0 315,000,0	000 4.31%
10/5/2006	570,633	302,767,000	127,767,000	3,458,986,633	3,469,344,00	0 300,000,	0.92%
10/6/2006	570,633	274,952,000	99,952,000	3,445,537,044	3,462,345,00	0 277,000,0	000 -0.74%
10/7/2006	570,633	283,371,000	108,371,000	3,462,915,633	3,462,345,00	0 277,000,	000 2.30%
10/8/2006	570,633	283,621,000	108,621,000	3,462,915,633	3,462,345,00	0 277,000,	2.39%
10/9/2006	570,633	283,871,000	108,871,000	3,462,915,633	3,462,345,00	0 277,000,	000 2.48%
10/10/2006	570,633	264,989,000	89,989,000	3,463,783,351	3,433,860,00	0 260,000,	000 1.92%
10/11/2006	570,633	252,884,000	77,884,000	3,432,076,285	3,401,942,00	0 231,000,	000 9.47%
10/12/2006	570,633	268,509,000	93,509,000	3,417,887,503	3,416,323,00	0 249,000,	7.83%
10/13/2006	570,633	235,603,000	60,603,000	3,421,593,633	3,423,094,00	0 239,000,	000 -1.42%
10/14/2006	570,633	235,367,000	60,367,000	3,423,664,633	3,423,094,00	0 239,000,	000 -1.52%
10/15/2006	570,633	235,131,000	60,131,000	3,423,664,633	3,423,094,00	0 239,000,	000 -1.62%
10/16/2006	570,633	227,950,000	52,950,000	3,421,719,321	3,418,281,00	0 233,000,	000 -2.17%
10/17/2006	570,633	260,067,000	85,067,000	3,426,204,192	3,408,900,00	0 249,000,	000 4.44%
10/18/2006	570,633	224,831,000	49,831,000	3,409,470,633	3,418,280,00	0 220,000,	000 2.20%
10/19/2006	570,633	249,595,000	74,595,000	3,413,850,633	3,414,757,00	0 243,000,	000 2.71%
10/20/2006	570,633	223,570,633	48,570,633	3,400,327,633	3,434,904,00	0 233,000,	000
10/21/2006	570,633	233,570,633	58,570,633	3,435,474,633	3,434,904,00	0 233,000,	000
10/22/2006	570,633	233,570,633	58,570,633	3,435,474,633	3,434,904,00	0 233,000,	000
10/23/2006	570,633	238,570,633	63,570,633	3,415,474,633	3,406,895,00	0 251,000,	000
10/24/2006	570,633	268,570,633	93,570,633	3,399,465,633	3,404,312,00	0 269,000,	000
10/25/2006	570,633	212,570,633	37,570,633	3,372,882,633		225,000,	000
10/26/2006	570,633	223,570,633	48,570,633	3,366,453,266		1	
10/27/2006	570,633	444,141,266	269,141,266	3,587,023,899			
10/28/2006	570,633	444,711,899	269,711,899	3,587,594,532	Daily	A	Daily
10/29/2006	570,633	445,282,532	270,282,532	3,588,165,165	•		<b>Daily</b>
10/30/2006	570,633	467,853,165	292,853,165	3,585,735,798	Pool		Opening
10/31/2006	570,633	468,423,798	293,423,798	3,586,306,431			
•	17,689,623		,	· · · · · · · · · · · · · · · · · · ·	Balance	•	Cash
					antonad		
Weekend Holiday					entered		entered
Holiday					here		here.
					nere		nere.

24

## **Smoothing Adjustment**

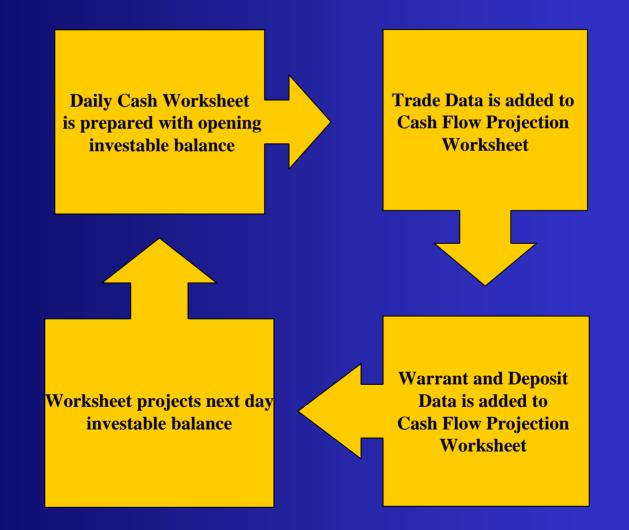
- The smoothing adjustment applies the "law of diminishing returns" to cash flow projections.
- Takes into account smaller transactions not specifically identified in the projection worksheet.
- The calculation includes a weighted average of annual monthly net inflows and outflows, with more recent years carrying more weighting.
- Allows for better projection accuracy without the need to track smaller inflows and outflows.

# **Smoothing Adjustment Calculation**

	Inflows	Weighted	Weight
Oct 2002	513,728,128	51,372,813	10%
Oct 2003	557,850,179	55,785,018	10%
Oct 2004	607,688,712	121,537,742	20%
Oct 2005	646,309,128	387,785,477	60%
	_	616,481,050	
	Outflows	Weighted	
Oct 2002	590,896,404	59,089,640	10%
Oct 2003	578,881,703	57,888,170	10%
Oct 2004	585,496,270	117,099,254	20%
Oct 2005	557,537,369	334,522,421	60%
	_	568,599,486	

	ADJUSTMENTS								
	Projected	Historical	Variance						
Revenues Adjustments	375,491,950								
"Adjusted" Revenues	375,491,950	616,481,050	240,989,100						
Expenditures Adjustments	(345,300,000)								
"Adjusted" Expend.	(345,300,000)	(568,599,486)	(223,299,486)						
Net cash	30,191,950	47,881,564	17,689,614						
Adjustment	17,689,614								
Div by 31	570,633.00								

## **Work Flow Process**



# **Tactical Investment Strategy**

- Short-term portfolio managed to target cash outflows.
- Long-term portfolio managed to a target duration by filling recommended maturity ranges.
- Size of recommended maturity range targets are determined by current market conditions.

# **Daily Portfolio Summary**

#### San Bernardino County Pool Maturity Structure as of October 25, 2006

	rent Expected WAM rior Expected WAM	<b>Pool</b> 287.8 days 279.3 days		Duration to Call  Effective Duration	<b>Pool</b> 0.705		<b>Target</b> 0.750 0.850	A-1+ A-1 AAA	<b>Pool</b> 1,032,842,379 199,572,359 2,081,810,69	0 6.0%
C	Current Actual WAM	298.3 days		Lifective Duration	0.721		0.000	AA	24,631,26	
	Prior Actual WAM	289.6 days	D	uration to Maturity	0.771		1.000	Other	24,001,20	- 0.0%
	· ······	200.0 00,0	_	aranorrio matarity	• • • • • • • • • • • • • • • • • • • •			o.i.io.		516 76
	Callable Structure:	5.0% callable		Overnight	▼ 1.000					
	Target		Pool	Pool						
Period	Recommended	Shortage /	Current Expected	Current Actual	450,000,000			Maturity Stru	cture	
Ending	Maturities	(Excess)	Market Value	Market Value				1/14/411/		Cumont Evnoated
O/N	300,497,102	55,497,102	245,000,000	245,000,000	400,000,000					□ Current Expected     □
Oct-06	183,359,586	133,385,199	49,974,387	49,974,387	100,000,000					■ Recommended
Nov-06	150,000,000	(264,656,857)	414,656,857	414,656,857						
Dec-06	150,000,000	(13,524,669)	163,524,669	163,524,669	350,000,000					
Jan-07	130,000,000	(51,837,699)	181,837,699	181,837,699						
Feb-07	130,000,000	(3,654,133)	133,654,133	133,654,133	300,000,000					
Mar-07	200,000,000	12,889,338	187,110,662	187,110,662	300,000,000					
Apr-07	175,000,000	27,282,107	147,717,893	147,717,893						
May-07	125,000,000	18,193,210	106,806,790	106,806,790	250,000,000					
Jun-07	150,000,000	(821,652)	150,821,652	130,777,902						• •   i
Jul-07	125,000,000	(27,392,012)	152,392,012	117,326,387	200,000,000					
Aug-07	125,000,000	(13,580,594)	138,580,594	128,574,344						
Sep-07	125,000,000	24,668,261	100,331,740	100,331,740	4.50.000.000					
Oct-07	125,000,000	64,916,162	60,083,839	60,083,839	150,000,000					
Jan-08	225,000,000	(33,859,670)	258,859,670	258,859,670						
Apr-08	200,000,000	(65,547,818)	265,547,818	265,547,818	100,000,000					
Jul-08	225,000,000	(5,677,655)	230,677,655	265,743,280						
Oct-08	225,000,000	89,555,665	135,444,335	135,444,335						
Jan-09	100,000,000	27,648,278	72,351,723	72,351,723	50,000,000					
Apr-09	75,000,000	(3,926,390)	78,926,390	78,926,390						
Jul-09	65,000,000	50,018,750	14,981,250	35,025,000	0					<del>▋</del> ▗░ <b>▊</b> ▗░▋▗░▊▗░ <mark>▊</mark> ▗░█
Oct-09	10,000,000	(39,574,922)	49,574,922	59,581,172		٠				
Apr-10	10,000,000	10,000,000	-	-	0	12 do 40	Dec Part Lep Wato,	kat Was, line, line line es oc	Ol 191 by 198 July	TO PER PORT BILLION PORT OF TO THE
Oct-10	5,000,000	5,000,000	-	-		Oct 404 C	becapal beathand	41. May In. 1. King 201 Oc	15. 45. 10 O	The Pate Angue Pate Oct Oct of Oct of

After Oct-10

5,000,000

3,338,856,688

5,000,000

3,338,856,688

3,338,856,688

# **Weekly Maturity Breakout**

#### **Dates**

September 30, 2007 - October 6, 2007

October 7, 2007 - October 13, 2007

October 14, 2007 - October 20, 2007

October 21, 2007 - October 27, 2007

October 28, 2007 - November 3, 2007

#### **Maturing Investments**

\$15,000,000.00

\$250,000.00

\$45,000,000.00

\$0.00

\$0.00

# **Daily Maturity Breakout**

Total / Average 60,250,000

-	CUSIP	Settlement	Description	Coupon	Maturity	Par Amount
1	3133X8X56	7/11/2005	FHLB GLOBAL NOTES (CALLABLE)	3.375	10/5/2007	15,000,000
2	31331RHF5	7/12/2005	FFCB NOTES	6.400	10/9/2007	250,000
3	31359MGH0	3/29/2005	FNMA GLOBAL BENCHMARK NOTES	6.625	10/15/2007	20,000,000
4	31364FDU2	12/7/2005	FNMA NOTES	6.340	10/16/2007	10,000,000
5	3128X3ZZ9	1/25/2006	FHLMC NOTES (CALLABLE)	3.500	10/19/2007	15,000,000
-						-
-						-
_						-

# **Conclusion**

Effective cash flow management integrated with a tactical and strategic investment discipline can yield positive results for your investment pool.

**QUESTIONS ??????**